DRAFT NOV 06 1990

CERCLIS IDENTIFICATION NUMBER	
STATE: NJ	SITE NUMBER: D986603686

SITE LOCATION

SITE NAME: Legal, common or descriptive name of site
DIETRICHS INDUSTRIAL

STREET ADDRESS, ROUTE or SPECIFIC LOCATION IDENTIFIER
DIETRICHS STREET

CITY	STATE	ZIP CODE	TELEPHONE
LITTLE FERRY	NJ	07643	( )

COORDINATES: LATITUDE and LONGITUDE
40° 50' 27 74° 02' 07"

TOWNSHIP, RANGE, and SECTION

OWNER/OPERATOR IDENTIFICATION

OWNER	OPERATOR
FRANK + MARGARET NOTARANGELO	NOTARANGELO CARTING
OWNER ADDRESS: 70 PENNSYLVANIA AVE.	OPERATOR ADDRESS: 251 2ND STREET
CITY: MONTVALE	CITY: SADDLEBROOK
STATE: NJ / ZIP CODE: / TELEPHONE: ( )	STATE: NJ / ZIP CODE: 07662 / TELEPHONE: (201) 391-0221

TYPE OF OWNERSHIP

- [x] PRIVATE
- [ ] FEDERAL: Agency name _____
- [ ] STATE
- [ ] COUNTY
- [ ] MUNICIPAL
- [ ] OTHER: _____
- [ ] NOT SPECIFIED

OWNER/OPERATOR NOTIFICATION ON FILE

- [x] NONE
- [ ] CERCLA 103 C. UNCONTROLLED WASTE SITE DATE: _____
- [ ] RCRA 3001 DATE: _____

SITE STATUS

- [ ] ACTIVE
- [x] INACTIVE
- [ ] UNKNOWN

YEARS OF OPERATION

BEGINNING YEAR: 1940
ENDING YEAR: 1961
- [ ] UNKNOWN

APPROXIMATE SIZE OF SITE

8.76 ACRES

SITE EVALUATION

AGENCY / ORGANIZATION	NJDEP / DHWM / BPA
INVESTIGATOR	KAREN HIERING
CONTACT	KEN KLOO
ADDRESS	300 HORIZON CENTER CN 407 TRENTON, NJ 08625
TELEPHONE	(609) 584-4250
DATE	5/20/91

200502

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GENERAL INFORMATION

May 31, 1991

Site Description and Operational History:

THE SUBJECT SITE IS LOCATED IN AN INDUSTRIAL AREA OF LITTLE FERRY, BERGEN COUNTY ON THE HACKENSACK RIVER. THE SUBJECT SITE WAS THE LOCATION OF THE LITTLE FERRY SEWAGE TREATMENT PLANT FROM APPROXIMATELY 1940 TO 1961 NO OTHER OPERATIONS ARE KNOWN TO HAVE BEEN CONDUCTED ON SITE. THE 1961, 1972 AND 1974 AERIAL PHOTOGRAPHS REVEALED MANY AREAS OF SOLID WASTE DEBRIS WITH MANY OBJECTS WHICH APPEAR TO BE 55 GALLON DRUMS. DISTURBANCE AND STRESSED VEGETATION WERE ALSO VISIBLE IN THE 1972 AND 1974 PHOTOGRAPHS. ONLY THREE DRUM-LIKE OBJECTS APPEAR IN THE 1978 AERIAL PHOTOGRAPH.

Probable Contaminants of Concern:

(Previous investigations; analytical data)

ON APRIL 1, 1989 SOIL SAMPLES WERE COLLECTED FROM SEVEN LOCATIONS AND WERE ANALYZED FOR PETROLEUM HYDROCARBONS AND VOLATILE ORGANIC COMPOUNDS. NO VOCS WERE DETECTED AT ANY OF THE SAMPLE LOCATIONS; PHC CONCENTRATIONS WERE DETECTED TO 514 ppm. DURING A APRIL 8, 1991 PRE-SAMPLING ASSESSMENT READINGS GREATER THAN 1000 ppm WERE NOTED ON THE OVA IN THE AREA ADJACENT TO THE RIVER.

THE AREA MAY ALSO BE CONTAMINATED WITH METALS BECAUSE SEWAGE SOMETIMES HAS METALS ASSOCIATED WITH IT.

THE CONTENTS OF THE DRUMS ARE UNKNOWN.

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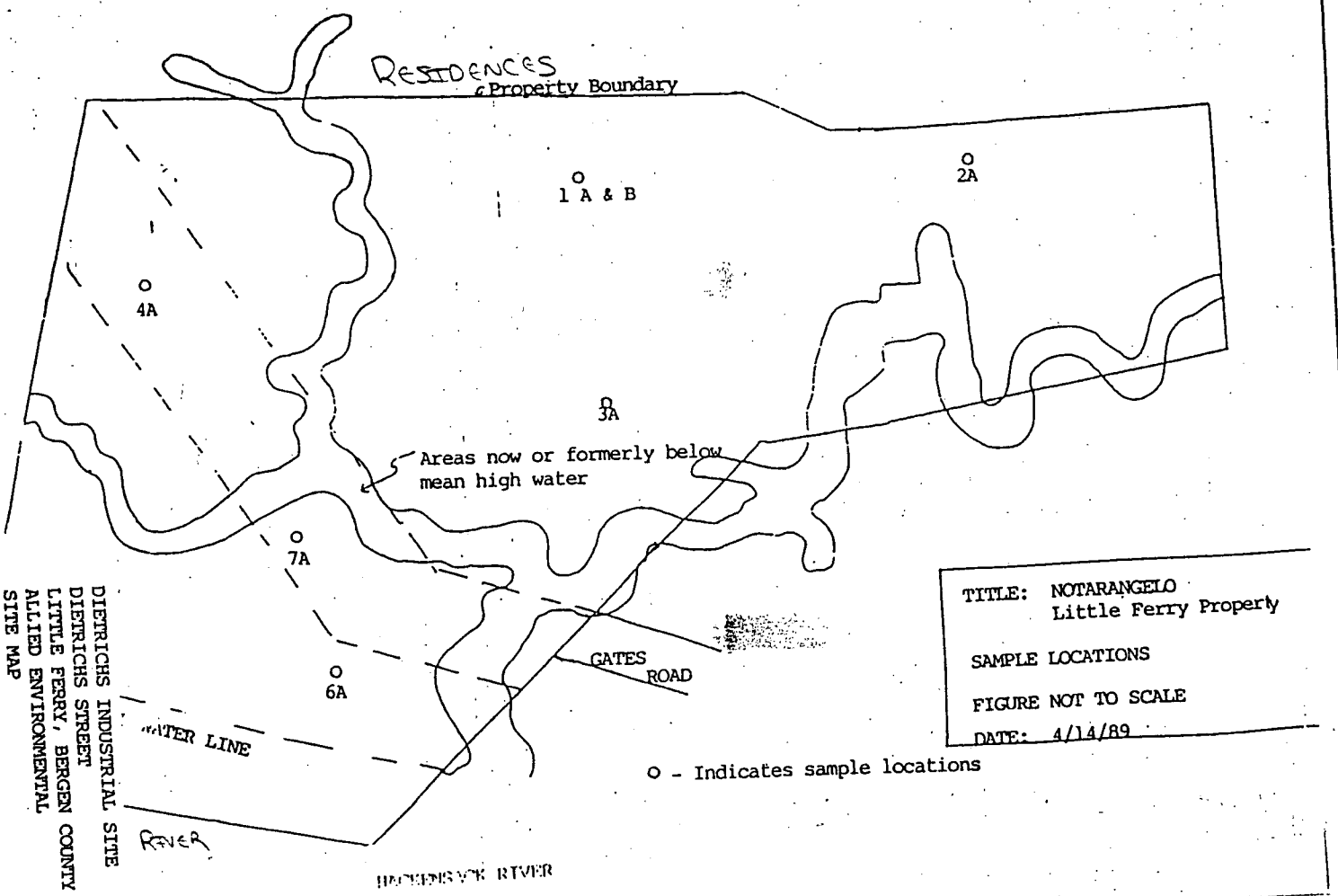
DIETRICHS INDUSTRIAL

Date: MAY 31, 1991

GENERAL INFORMATION (continued)

Site Sketch:

(Show all pertinent features; indicate sources and closest targets)



DIETRICHS INDUSTRIAL SITE
DIETRICHS STREET
LITTLE FERRY, BERGEN COUNTY
ALLIED ENVIRONMENTAL
SITE MAP

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GENERAL INFORMATION (continued)

Source Descriptions:

1. DRUMS - SEVERAL HUNDRED AT ANY ONE TIME PER AERIAL PHOTOGRAPHS
NO DRUMS ARE CURRENTLY PRESENT
2. SURFACE IMPOUNDMENT USED FOR SEWAGE TREATMENT. ESTIMATE SIZE OF IMPOUNDMENT PER AERIAL PHOTOGRAPH IS 300' x 100'
3. CONTAMINATED SOIL - 1989 SOIL SAMPLING INDICATES THAT SOIL IS CONTAMINATED WITH PHCs TWO SAMPLE LOCATIONS EXHIBITED LEVELS OF PHCs ABOVE NJDEP ACTION LEVELS.

Waste Characteristics (WC) Calculations:
(See PA Table 1, page 5)

1. DRUMS - APPROXIMATELY 300 DRUMS ÷ 10 = 30
2. SURFACE IMPOUNDMENT - 300' x 100' = 30000 FT^2 ÷ 13 = 2308
3. CONTAMINATED SOIL - 8.76 ACRES ÷ 0.78 = 11.23

TOTAL = 2349.2

WC = 32

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PA TABLE 1: WASTE CHARACTERISTICS (WC) SCORES

PA Table 1a: WC Scores for Single Source Sites and Formulas for Multiple Source Sites

TIER	SOURCE TYPE	SINGLE SOURCE SITES (assigned WC scores)			MULTIPLE SOURCE SITES
		WC = 18	*WC = 32*	*WC = 100*	Formula for Assigning Source WQ Values
CONSTITUENT	N/A	≤100 lbs	>100 to 10,000 lbs	>10,000 lbs	*lbs ÷ 1*
WASTESTREAM	N/A	≤500,000 lbs	>500,000 to 50 million lbs	>50 million lbs	*lbs ÷ 5,000*
VOLUME	Landfill	≤6.75 million ft^3 ≤250,000 yd^3	>6.75 million ft^3 to 675 million ft^3 >250,000 to 25 million yd^3	>675 million ft^3 >25 million yd^3	*ft^3 ÷ 67,500* *yd^3 ÷ 2,500*
	Surface impoundment	≤6,750 ft^3 ≤250 yd^3	>6,750 ft^3 to 675,000 ft^3 >250 to 25,000 yd^3	>675,000 ft^3 >25,000 yd^3	*ft^3 ÷ 67.5* *yd^3 ÷ 2.5*
	Drums	≤1,000 drums	>1,000 to 100,000 drums	>100,000 drums	*drums ÷ 10*
	Tanks and non-drum containers	≤50,000 gallons	>50,000 to 5 million gallons	>5 million gallons	*gallons ÷ 500*
	Contaminated soil	≤6.75 million ft^3 ≤250,000 yd^3	>6.75 million ft^3 to 675 million ft^3 >250,000 to 25 million yd^3	>675 million ft^3 >25 million yd^3	*ft^3 ÷ 67,500* *yd^3 ÷ 2,500*
	Pile	≤6,750 ft^3 ≤250 yd^3	>6,750 ft^3 to 675,000 ft^3 >250 to 25,000 yd^3	>675,000 ft^3 >25,000 yd^3	*ft^3 ÷ 67.5* *yd^3 ÷ 2.5*
AREA	Landfill	≤340,000 ft^2 ≤7.8 acres	>340,000 to 34 million ft^2 >7.8 to 780 acres	>34 million ft^2 >780 acres	*ft^2 ÷ 3,400* *acres ÷ 0.078*
	Surface impoundment	≤1,300 ft^2 ≤0.029 acres	>1,300 to 130,000 ft^2 >0.029 to 2.9 acres	>130,000 ft^2 >2.9 acres	*ft^2 ÷ 13* *acres ÷ 0.00029*
	Contaminated soil	≤3.4 million ft^2 ≤78 acres	>3.4 million to 340 million ft^2 >78 to 7,800 acres	>340 million ft^2 >7,800 acres	*ft^2 ÷ 34,000* *acres ÷ 0.78*
	Pile*	≤1,300 ft^2 ≤0.029 acres	>1,300 to 130,000 ft^2 >0.029 to 2.9 acres	>130,000 ft^2 >2.9 acres	*ft^2 ÷ 13* *acres ÷ 0.00029*
	Land treatment	≤27,000 ft^2 ≤0.62 acres	>27,000 to 2.7 million ft^2 >0.62 to 62 acres	>2.7 million ft^2 >62 acres	*ft^2 ÷ 270* *acres ÷ 0.0062*

1 ton = 2,000 lbs = 1 yd^3 = 4 drums = 200 gallons

* Use area of land surface under pile, not surface area of pile.

PA Table 1b: WC Scores for Multiple Source Sites

WQ Total	*WC Score*
>0 to 100	18
>100 to 10,000	32
>10,000	100

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GROUND WATER PATHWAY
GROUND WATER USE DESCRIPTION

Describe Ground Water Use Within 4-miles of the Site:
(Provide generalized stratigraphy; information on aquifers, municipal, and or private wells)

THE BRUNSWICK FORMATION OF THE NEWARK GROUP IS COMPOSED OF MUDSTONE, SILTSTONE AND SANDSTONE AND IS THE MOST IMPORTANT BEDROCK AQUIFER IN THE HACKENSACK RIVER BASIN. WATER OCCURS IN THIS FORMATION IN A NETWORK OF INTERCONNECTED OPENINGS FORMED ALONG JOINTS, FRACTURES AND SOLUTION OPENINGS. THE ZONE IN THE BRUNSWICK FORMATION THAT CONTAINS FRESH-WATER-BEARING OPENINGS IS GENERALLY LESS THAN 200 FEET THICK IN THE MAIN VALLEYS OF THE HACKENSACK RIVER. THE STOCKTON AND LOCKATONG FORMATIONS OF THE NEWARK GROUP HAVE VERY LIMITED AERIAL EXTENT AND ARE NOT IMPORTANT AQUIFERS IN THE BASIN.

THERE ARE NO PUBLIC SUPPLY WELLS WITHIN 1 MILE OF THE SITE.
THERE ARE 16 PUBLIC SUPPLY WELLS WITHIN 4 MILES OF THE SITE BELONGING TO HACKENSACK WATER COMPANY, LODI AND WALLING; HOWEVER THESE WELLS ARE NOT IN SERVICE DUE TO OPERATIONAL CONSIDERATIONS AND VOLATILE ORGANIC CONTAMINATION. The water companies PURCHASE WATER FROM THE PASSAIC VALLEY WATER COMMISSION.
THERE ARE SIX KNOWN PRIVATE POTABLE WELLS WITHIN 1 MILE OF THE SITE.

Show calculations of ground water drinking water populations:

0-1/4 mile - 0
1/4-1/2 mile - 0
1/2 - 1 mile - 5 private wells x 2.5 people/well = 12.5 people

1 - 2 miles, 2-3 miles, 3-4 miles - 0
NO KNOWN PRIVATE WELLS - WATER IS SUPPLIED BY THE HACKENSACK WATER COMPANY.

ALL OF HACKENSACK WATER COMPANY'S WELLS WITHIN 4 MILES ARE NOT CURRENTLY IN SERVICE.

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GROUND WATER PATHWAY CRITERIA LIST

Site Name: DIETRICH'S INDUSTRIES
Date: May 31, 1991

This chart provides guidelines to assist you in hypothesizing the presence of a suspected release and identifying primary targets. It is expected that not all of this information will be available during the PA. Also, these criteria are not all-inclusive; list any other criteria you use to hypothesize a suspected release or to identify primary targets. This chart will record your professional judgment in evaluating these factors.

The "Suspected Release" section of the chart guides you through evaluation of some site, source, and pathway conditions to help hypothesize whether a release from the site is likely. If a release is suspected, use the "Primary Targets" section to guide you through evaluation of some conditions that will help identify targets likely to be exposed to hazardous substances. You may use this section of the chart more than once, depending on the number of targets you feel may be considered "primary." In the "Primary Targets" section on this sheet, record the responses for the well that you feel has the highest probability of being exposed to hazardous substances.

Check the boxes to indicate a "yes", "no", or "unknown" answer to each question. If you check the "Suspected Release" box as "yes", make sure that you assign a Likelihood of Release value of 550 for the pathway.

GROUND WATER PATHWAY

SUSPECTED RELEASE

Yes	No	Unknown	
☑	☐	☐	Are sources poorly contained?
☐	☐	☐	Is the source a type likely to contribute to ground water contamination (e.g., wet lagoon)?
☐	☐	☑	Is waste quantity particularly large?
☑	☐	☐	Is precipitation heavy and infiltration rate high?
☐	☑	☐	Is the site located in an area of karst terrain?
☑	☐	☐	Is the subsurface highly permeable or conductive?
☐	☑	☐	Is drinking water drawn from a shallow aquifer?
☐	☐	☑	Are suspected contaminants highly mobile in ground water?
☐	☑	☐	Does any circumstantial evidence of ground water or drinking water contamination exist?
☐	☑		Other criteria? _____
☑	☐		**SUSPECTED RELEASE?**

PRIMARY TARGETS

Yes	No	Unknown	
☐	☑	☐	Is any drinking-water well nearby?
☐	☑	☐	Is any nearby drinking-water well closed?
☐	☐	☑	Has foul-tasting or foul-smelling water been reported by any nearby drinking-water users?
☐	☑	☐	Do any nearby wells have a large drawdown or high production rate?
☐	☑	☐	Are drinking-water wells located between the site and other wells that are suspected to be exposed to hazardous substances?
☐	☑	☐	Does any circumstantial evidence of ground water or drinking water contamination exist?
☐	☑	☐	Does any drinking-water well warrant sampling?
☐	☐		Other criteria? _____
☐	☑		**PRIMARY TARGET(S) IDENTIFIED?**

Summarize the rationale for suspected release (attach an additional page if necessary):

There has been documented on site soil contamination.
The condition and content of the drums on site is unknown.
The sewage treatment impoundment may have been unlined.

Summarize the rationale for Primary Targets (attach an additional page if necessary):

The closest private potable well is 0.50 mile from the site
The closest public well is 2.2 miles from the site and is not currently used.

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Date: May 31, 1991

GROUND WATER PATHWAY SCORESHEET

Pathway Characteristics	
Do you suspect a release (see Ground Water Pathway Criteria List, page 7)?	Yes ___ No /
Is the site located in karst terrain?	Yes ___ No ___
Depth to aquifer:	100 ft
Distance to the nearest drinking-water well:	2600 ft

	A Suspected Release	B. No Suspected Release	References
LIKELIHOOD OF RELEASE			
1. SUSPECTED RELEASE: If you suspect a release to ground water (see page 7), assign a score of 550, and use only column A for this pathway.	[660] 550		
2. NO SUSPECTED RELEASE: If you do not suspect a release to ground water, and the site is in karst terrain or the depth to aquifer is 70 feet or less, assign a score of 500; otherwise, assign a score of 340. Use only column B for this pathway.		[500 or 340]	
LR =	550		
TARGETS			
3. PRIMARY TARGET POPULATION: Determine the number of people served by drinking water from wells that you suspect have been exposed to hazardous substances from the site (see Ground Water Pathway Criteria List, page 7). ___ people x 10 =	0		
4. SECONDARY TARGET POPULATION: Determine the number of people served by drinking water from wells that you do NOT suspect have been exposed to hazardous substances from the site, and assign the total population score from PA Table 2. Are any wells part of a blended system? Yes ___ No ___ If yes, attach a page to show apportionment calculations.	1		
5. NEAREST WELL: If you have identified any Primary Targets for ground water, assign a score of 50; otherwise, assign the highest Nearest Well score from PA Table 2. If no drinking-water wells exist within 4 miles, assign a score of zero.	[50, 20, 18, 9, 6, 3, 2, or 0] 9	[20, 18, 9, 6, 3, 2, or 0]	
6. WELLHEAD PROTECTION AREA (WHPA): Assign a score of 20 if any portion of a designated WHPA is within ¼ mile of the site; assign 5 if from ¼ to 4 miles.	[20, 5, or 0] 5	[20, 5, or 0] 5	
7. RESOURCES: A score of 5 is assigned.	[5] 5	[5] 5	
T =	20		
WASTE CHARACTERISTICS			
8. A. If you have identified any Primary Targets for ground water, assign the waste characteristics score calculated on page 4, or a score of 32, whichever is GREATER; do not evaluate part B of this factor.	[100 or 32]		
8. If you have NOT identified any Primary Targets for ground water, assign the waste characteristics score calculated on page 4.	[100, 32, or 18] 32	[100, 32, or 18] 32	
WC =	32		

GROUND WATER PATHWAY SCORE: $\frac{LR \times T \times WC}{82{,}500}$ = [maximum of 100] 4.3

Site Name:
Date:

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PA TABLE 2: VALUES FOR SECONDARY GROUND WATER TARGET POPULATIONS

PA Table 2a: Non-Karst Aquifers

Distance from Site	Population	Nearest Well (choose highest)	Population Served by Wells Within Distance Category: 1 to 10	11 to 30	31 to 100	101 to 300	301 to 1,000	1,001 to 3,000	3,001 to 10,000	10,001 to 30,000	30,001 to 100,000	100,001 to 300,000	Population Value
0 to ¼ mile	0	20	1	2	5	16	52	163	521	1,633	5,214	16,325	0
> ¼ to ½ mile	0	18	1	1	3	10	32	101	323	1,012	3,233	10,121	0
> ½ to 1 mile	12.5	(9)	1	(1)	2	5	17	52	167	522	1,668	5,224	1
> 1 to 2 miles	0	5	1	1	1	3	9	29	94	294	939	2,938	0
> 2 to 3 miles	0	3	1	1	1	2	7	21	68	212	678	2,122	0
> 3 to 4 miles	6	2	1	1	1	1	4	13	42	131	417	1,306	0
Nearest Well =		9										Score =	1

PA Table 2b: Karst Aquifers

Distance from Site	Population	Nearest Well (use 20 for karst)	Population Served by Wells Within Distance Category: 1 to 10	11 to 30	31 to 100	101 to 300	301 to 1,000	1,001 to 3,000	3,001 to 10,000	10,001 to 30,000	30,001 to 100,000	100,001 to 300,000	Population Value
0 to ¼ mile		20	1	2	5	16	52	163	521	1,633	5,214	16,325	
> ¼ to ½ mile		20	1	1	3	10	32	101	323	1,012	3,233	10,121	
> ½ to 1 mile		20	1	1	3	8	26	82	261	816	2,607	8,162	
> 1 to 2 miles		20	1	1	3	8	26	82	261	816	2,607	8,162	
> 2 to 3 miles		20	1	1	3	8	26	82	261	816	2,607	8,162	
> 3 to 4 miles		20	1	1	3	8	26	82	261	816	2,607	8,162	
Nearest Well =												Score =	

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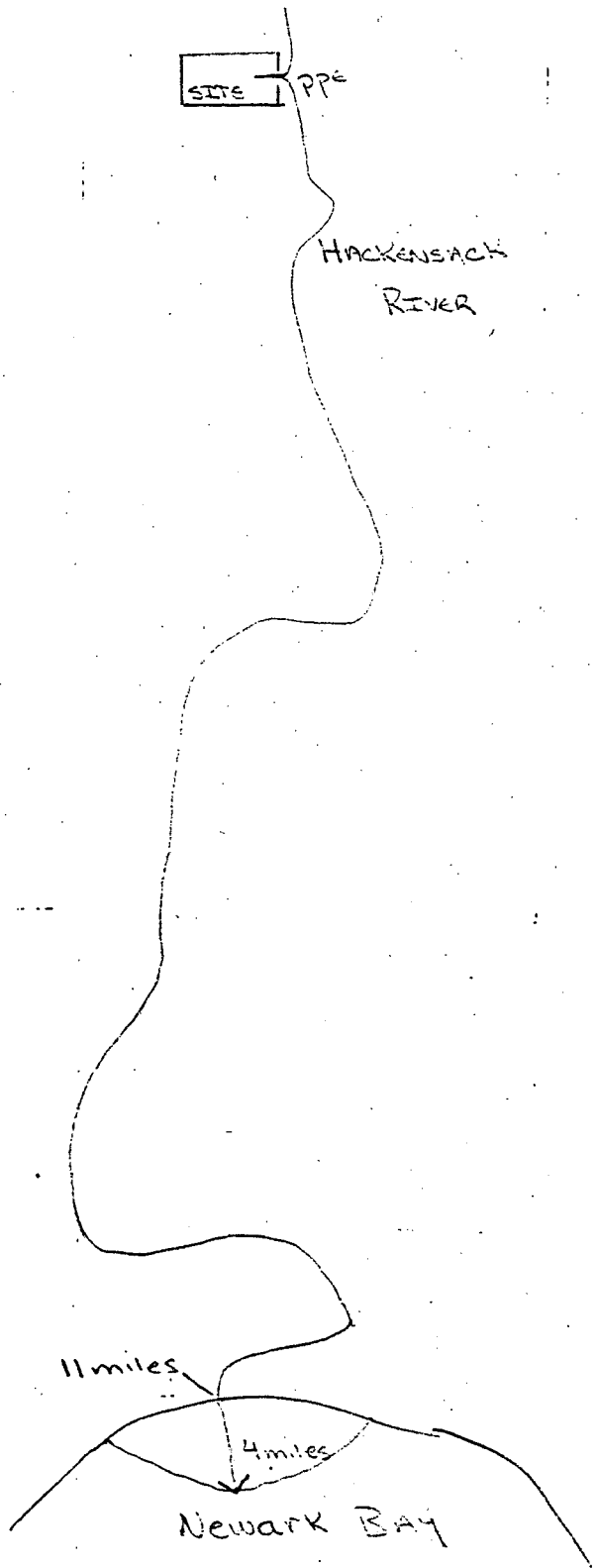
SURFACE WATER PATHWAY MIGRATION ROUTE SKETCH

Provide a Sketch of the Surface Water Migration Route:
(include runoff route, probable point of entry, 15-mile target distance limit, intakes, fisheries, and sensitive environments)



SURFACE WATER PATHWAY CRITERIA LIST

Site Name: DISTRICO

Date: MAY 31, 1991

This chart provides guidelines to assist you in hypothesizing the presence of a suspected release and identifying primary targets. It is expected that not all of this information will be available during the PA. Also, these criteria are not all-inclusive; list any other criteria you use to hypothesize a suspected release or to identify primary targets. This chart will record your professional judgment in evaluating these factors.

The "Suspected Release" section of the chart guides you through evaluation of some site, source, and pathway conditions to help hypothesize whether a release from the site is likely. If a release is suspected, use the "Primary Targets" section to guide you through evaluation of some conditions that will help identify targets likely to be exposed to hazardous substances. You may use this section of the chart more than once, depending on the number of targets you feel may be considered "primary." In the "Primary Targets" section on this sheet, record the responses for the target that you feel has the highest probability of being exposed to hazardous substances.

Check the boxes to indicate a "yes", "no", or "unknown" answer to each question. If you check the "Suspected Release" box as "yes", make sure that you assign a Likelihood of Release value of 550 for the pathway.

SURFACE WATER PATHWAY

SUSPECTED RELEASE

Yes	No	Unknown	
☑	☐	☐	Is surface water nearby?
☐	☑	☐	Is waste quantity particularly large?
☑	☐	☐	Is the drainage area large?
☑	☐	☐	Is precipitation heavy or infiltration rate low?
☑	☐	☐	Are sources poorly contained or prone to runoff or flooding?
☐	☑	☐	Is a runoff route well defined (e.g., ditch or channel leading to surface water)?
☐	☑	☐	Is vegetation stressed along the probable runoff path?
☐	☐	☑	Are suspected contaminants highly persistent in surface water?
☑	☐	☐	Are sediments/water unnaturally discolored?
☐	☐	☑	Is wildlife unnaturally absent?
☑	☐	☐	Has deposition of waste into surface water been observed?
☐	☑	☐	Is ground water discharge to surface water likely?
☑	☐	☐	Is there any circumstantial evidence of surface water contamination?
☐	☑		Other criteria? _____
☑	☐		**SUSPECTED RELEASE?**

PRIMARY TARGETS

Yes	No	Unknown	
☑	☐	☐	Is any target nearby? If yes:
			☐ Drinking-water intake
			☑ Fishery
			☑ Sensitive environment
☐	☐	☑	Has an intake, fishery, or recreational area been closed?
☐	☑	☐	Is there any circumstantial evidence of surface water contamination at or downstream of a target?
☑	☐	☐	Does any target warrant sampling? If yes:
			☐ Drinking-water intake
			☐ Fishery
			☑ Sensitive environment
☐	☑		Other criteria? _____
☐	☑		**PRIMARY INTAKE(S) IDENTIFIED?**
☐	☑		**PRIMARY FISHERY IDENTIFIED?**
☑	☐		**PRIMARY SENSITIVE ENVIRONMENT(S) IDENTIFIED?**

Summarize the rationale for suspected release (attach an additional page if necessary):

SURFACE WATER IS LOCATED ADJACENT TO THE SITE.
SURFACE WATER IS TIDAL CAUSING FLOODING OF THE SITE.

Summarize the rationale for Primary Targets (attach an additional page if necessary):

The site is located IN A PALUSTRINE BROAD-LEAVED DECIDUOUS SCRUB/SHRUB AND A PALUSTRINE EMERGENT WETLANDS ENVIRONMENT. THERE IS ALSO ESTUARINE WETLANDS WITHIN 700 FEET OF THE SITE. THE HACKENSACK RIVER IS A FISHERY.

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SURFACE WATER PATHWAY
LIKELIHOOD OF RELEASE AND DRINKING WATER THREAT SCORESHEET

Pathway Characteristics	
Do you suspect a release (see Surface Water Pathway Criteria List, page 11)?	Yes ✓ No ___
Distance to surface water:	0 ft
Flood Frequency:	tidal yrs
What is the downstream distance to the nearest drinking-water intake? ___ miles	
nearest fishery? 0 miles. nearest sensitive environment? 0 miles	

	A Suspected Release	B No Suspected Release	References
LIKELIHOOD OF RELEASE	[550] 550		
1. SUSPECTED RELEASE: If you suspect a release to surface water (see page 11), assign a score of 550, and use only column A for this pathway.			
2. NO SUSPECTED RELEASE: If you do not suspect a release to surface water, and the distance to surface water is 2,500 feet or less, assign a score of 500; otherwise, assign a score from the table below. Use only column B for this pathway.		[500, 400, 300 or 100]	
LR =	[550] 550	[500, 400, 300 or 100]	

Floodplain	Score
Site in annual or 10-yr floodplain	500
Site in 100-yr floodplain	400
Site in 500-yr floodplain	300
Site outside 500-yr floodplain	100

DRINKING WATER THREAT TARGETS

3. Determine the water body types, flows (if applicable), and number of people served by all drinking-water intakes within the 15-mile target distance limit. If there are no drinking-water intakes within the target distance limit, assign a total Targets score of 5 at the bottom of this page (Resources only) and proceed to page 14.

Intake Name	Water Body Type	Flow	People Served
		___ cfs	
		___ cfs	
		___ cfs	

4. PRIMARY TARGET POPULATION: If you suspect any drinking-water intake listed above has been exposed to hazardous substances from the site (see Surface Water Pathway Criteria List, page 11), list the intake name(s) and calculate the factor score based on the number of people served.

___, ___,

___ people x 10 =

5. SECONDARY TARGET POPULATION: Determine the Secondary Target Population score from PA Table 3 based on the populations using drinking-water from intakes that you do NOT suspect have been exposed to hazardous substances from the site.

Are any intakes part of a blended system? Yes ___ No ___

If yes, attach a page to show apportionment calculations.

[50, 20, 10, 2, 1, or 0] | [20, 10, 2, 1, or 0]

6. NEAREST INTAKE: If you have identified any Primary Targets for the drinking water threat (Factor 4), assign a score of 50; otherwise, assign the Nearest Intake score from PA Table 3. If no drinking-water intake exists within the 15-mile target distance limit, assign a score of zero.

[5] 5 | [5] 5

7. RESOURCES: A score of 5 is assigned.

T = 5

Site Name:
Date:

PA TABLE 3: VALUES FOR SECONDARY SURFACE WATER TARGET POPULATIONS

Surface Water Body Flow Characteristics (see PA Table 4)	Population	Nearest Intake (choose highest)	Population Served by Intakes Within Flow Category											Population Value
			1 to 30	31 to 100	101 to 300	301 to 1,000	1,001 to 3,000	3,001 to 10,000	10,001 to 30,000	30,001 to 100,000	100,001 to 300,000	300,001 to 1,000,000	1,000,001 to 3,000,000	
< 10 cfs	0	20	2	5	16	52	163	521	1,633	5,214	16,325	52,136	163,248	
10 to 100 cfs		2	1	1	2	5	16	52	163	521	1,633	5,214	16,325	
> 100 to 1,000 cfs		1	0	0	1	1	2	5	16	52	163	521	1,633	
> 1,000 to 10,000 cfs		0	0	0	0	0	1	1	2	5	16	52	163	
> 10,000 cfs or Great Lakes		0	0	0	0	0	0	0	1	1	2	5	16	
3-mile Mixing Zone		10	1	3	8	26	82	261	816	2,607	8,162	26,068	81,663	

Nearest Intake = 0

Score = 0

PA TABLE 4: SURFACE WATER TYPE / FLOW CHARACTERISTICS WITH DILUTION WEIGHTS FOR SECONDARY SURFACE WATER SENSITIVE ENVIRONMENTS

Type of Surface Water Body			Dilution Weight
Water Body Type	OR	Flow Characteristics	
minimal stream		flow less than 10 cfs	1
small to moderate stream		flow 10 to 100 cfs	0.1
moderate to large stream		flow greater than 100 to 1,000 cfs	N/A
large stream to river		flow greater than 1,000 to 10,000 cfs	N/A
large river		flow greater than 10,000 cfs	N/A
3-mile mixing zone of quiet flowing streams or rivers		flow 10 cfs or greater	N/A
coastal tidal water (harbors, sounds, bays, etc.), ocean, or Great Lakes		N/A	N/A

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Date: MAY 31, 1991

SURFACE WATER PATHWAY (continued)
HUMAN FOOD CHAIN THREAT SCORESHEET

	A Suspected Release	B No Suspected Release	References
LIKELIHOOD OF RELEASE			
Enter the Surface Water Likelihood of Release score from page 12. LR =	[550] 550	[500,400,300 or 100]	

HUMAN FOOD CHAIN THREAT TARGETS

8. Determine the water body types and flows (if applicable) for all fisheries within the 15-mile target distance limit. If there are no fisheries within the target distance limit, assign a Targets score of 0 at the bottom of this page and proceed to page 15.

Fishery Name	Water Body Type	Flow
HACKENSACK RIVER	RIVER	[1000 - 10000] cfs
NEWARK BAY	BAY	710 cfs
		cfs
		cfs
		cfs

9. PRIMARY FISHERIES: If you suspect any fishery listed above has been exposed to hazardous substances from the site (see Surface Water Criteria List, page 11), assign a score of 300 and do not evaluate Factor 10. List the Primary Fisheries:

HACKENSACK RIVER, _____, _____, _____

[300 or 0] 300

10. SECONDARY FISHERIES: If you have not identified any Primary Fisheries, assign a Secondary Fisheries score from the table below using the LOWEST flow at any fishery within the 15-mile target distance limit.

Lowest Flow	Secondary Fisheries Score
< 10 cfs	210
10 to 100 cfs	30
> 100 cfs, coastal tidal waters, oceans, or Great Lakes	12

[210,30,12 or 0]

[210,30,12, or 0]

T = [300,210,30,12 or 0] 300 | [210,30,12 or 0]

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SURFACE WATER PATHWAY (continued)
ENVIRONMENTAL THREAT SCORESHEET

	A	B	
	Suspected Release	*No Suspected Release*	*References*
LIKELIHOOD OF RELEASE			
Enter the Surface Water Likelihood of Release score from page 12. LR =	(550) 550	(500, 400, 300 or 100)	

ENVIRONMENTAL THREAT TARGETS

11. Determine the water body types and flows (if applicable) for all surface water sensitive environments within the 15-mile target distance limit (see PA Tables 4 and 5). If there are no sensitive environments within the 15-mile target distance limit, assign a Targets score of 0 at the bottom of this page, and proceed to page 17.

Environment Name	*Water Body Type*	*Flow*
Hackensack River	River	7000 - 10000 cfs
		cfs
		cfs
		cfs
		cfs

(300 or 0)

12. PRIMARY SENSITIVE ENVIRONMENTS: If you suspect any sensitive environment listed above has been exposed to hazardous substances from the site (see Surface Water Criteria List, page 11), assign a score of 300 and do not evaluate Factor 13. List the Primary Sensitive Environments:

300

_____, _____,

_____, _____.

13. SECONDARY SENSITIVE ENVIRONMENTS:

A. For Secondary Sensitive Environments on surface water bodies with flows of 100 cfs or less, assign scores as follows, and do not evaluate part B of this factor:

Flow	*Dilution Weight (PA Table 4)*		*Environment Type and Value (PA Tables 5 and 6)*		*Total*
cfs		x		=	
cfs		x		=	
cfs		x		=	
cfs		x		=	
cfs		x		=	

Sum =

(10 or 0) (10 or 0)

B. If NO Secondary Sensitive Environments are located on surface water bodies with flows of 100 cfs or less, assign a score of 10.

T = 300

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Site Name: DIETRICHS INDUSTRIAL
Date: MAY 31, 1991

PA TABLE 5: SURFACE WATER AND AIR SENSITIVE ENVIRONMENTS VALUES

Sensitive Environment	Assigned Value
Critical habitat for Federally designated endangered or threatened species Marine Sanctuary National Park Designated Federal Wilderness Area Ecologically important areas identified under the Coastal Zone Wilderness Act Sensitive Areas identified under the National Estuary Program or Near Coastal Water Program of the Clean Water Act Critical Areas Identified under the Clean Lakes Program of the Clean Water Act (subareas in lakes or entire small lakes) National Monument National Seashore Recreation Area National Lakeshore Recreation Area	100
Habitat known to be used by Federally designated or proposed endangered or threatened species National Preserve National or State Wildlife Refuge Unit of Coastal Barrier Resources System Federal land designated for the protection of natural ecosystems Administratively Proposed Federal Wilderness Area Spawning areas critical for the maintenance of fish/shellfish species within a river system, bay or estuary Migratory pathways and feeding areas critical for the maintenance of anadromous fish species in a river system Terrestrial areas utilized by large or dense aggregations of vertebrate animals (semi-aquatic foragers) for breeding	75
National river reach designated as recreational Habitat known to be used by State designated endangered or threatened species Habitat known to be used by a species under review as to its Federal endangered or threatened status Coastal Barrier (partially developed)	50
Federally designated Scenic or Wild River State land designated for wildlife or game management State designated Scenic or Wild River State designated Natural Area Particular areas, relatively small in size, important to maintenance of unique biotic communities	25
State designated areas for the protection/maintenance of aquatic life under the Clean Water Act	5
Wetlands	See PA Table 6 (Surface Water Pathway) or PA Table 9 (Air Pathway)

PA TABLE 6: SURFACE WATER WETLANDS FRONTAGE VALUES

Total Length of Wetlands	Assigned Value
Less than 0.1 mile	0
0.1 to 1 mile	25
Greater than 1 to 2 miles	50
Greater than 2 to 3 miles	75
Greater than 3 to 4 miles	100
Greater than 4 to 8 miles	150
Greater than 8 to 12 miles	250
Greater than 12 to 16 miles	350
Greater than 16 to 20 miles	450
Greater than 20 miles	500

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SURFACE WATER PATHWAY (concluded)
WASTE CHARACTERISTICS, THREAT, AND PATHWAY SCORE SUMMARY

WASTE CHARACTERISTICS

	A *Suspected Release*	B *No Suspected Release*
14. A. If you have identified ANY Primary Targets for surface water (pages 12, 14, or 15), assign the waste characteristics score calculated on page 4, or a score of 32, whichever is GREATER; do not evaluate part B of this factor.	(100 or 32) 32	
B. If you have NOT identified any Primary Targets for surface water, assign the waste characteristics score calculated on page 4.	(100,32, or 18)	(100,32, or 18)
WC =	32	

SURFACE WATER PATHWAY THREAT SCORES

Threat	*Likelihood of Release (LR) Score (from page 12)*	*Targets (T) Score*	*Pathway Waste Characteristics (WC) Score (determined above)*	*Threat Score LR x T x WC / 82,500*
Drinking Water	550	5	32	(subject to a maximum of 100) 1.1
Human Food Chain	550	300	32	(subject to a maximum of 100) 64.0
Environmental	550	300	32	(subject to a maximum of 60) 60.0

SURFACE WATER PATHWAY SCORE
(Drinking Water Threat + Human Food Chain Threat + Environmental Threat)

(subject to a maximum of 100) 100

SOIL EXPOSURE PATHWAY CRITERIA LIST

Site Name: DIETRICH'S
Date: MAY 31, 1991

This chart provides guidelines to assist you in hypothesizing the presence of a resident population. It is expected that not all of this information will be available during the PA. Also, these criteria are not all-inclusive; list any other criteria you use to hypothesize resident populations. This chart will record your professional judgment in evaluating this factor.

Use the resident population section to guide you through evaluation of some site and source conditions that will help identify targets likely to be exposed to hazardous substances. You may use this section of the chart more than once, depending on the number of nearby people you feel may be considered part of a resident population. Record the responses for the resident population target that you feel has the highest probability of being exposed to hazardous substances.

Check the boxes to indicate a "yes", "no", or "unknown" answer to each question.

SOIL EXPOSURE PATHWAY

SUSPECTED CONTAMINATION	*RESIDENT POPULATION*			
	Yes	No	Unknown	
Surficial contamination is assumed.	☑	☐	☐	Are there residences, schools, or day care facilities on or within 200 feet of areas of suspected contamination?
	☑	☐	☐	Are residences, schools, or day care facilities located on adjacent land previously owned or leased by the site owner/operator?
	☑	☐	☐	Is there an overland migration route that might spread hazardous substances near residences, schools, or day care facilities?
	☐	☐	☑	Are there any reports of adverse health effects from onsite or adjacent residents or students, exclusive of apparent drinking water or air contamination problems?
	☐	☑	☐	Does any offsite property warrant sampling?
	☐	☑		Other criteria? _____
	☑	☐		RESIDENT POPULATION IDENTIFIED?

Summarize the rationale for resident population (attach an additional page if necessary):

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Site Name: [illegible]

Date: May 31, 1991

SOIL EXPOSURE PATHWAY SCORESHEET

Pathway Characteristics	
Do any people live on or within 200 ft of areas of suspected contamination?	Yes ✓ No ___
Do any people attend school or day care on or within 200 ft of areas of suspected contamination?	Yes ___ No ✓
Is the facility active? Yes ___ No ✓ If yes, estimate the number of workers: ___	

		A Suspected Contamination	B No Suspected Contamination	References
LIKELIHOOD OF EXPOSURE				
1. SUSPECTED CONTAMINATION: Surficial contamination is assumed. A score of 550 is assigned.	LE =	[550] 550		
RESIDENT POPULATION THREAT TARGETS				
2. RESIDENT POPULATION: Determine the number of people occupying residences or attending school or day care on or within 200 feet of areas of suspected contamination (see Soil Exposure Pathway Criteria List, page 18). 14 people x 10 =		140		
3. RESIDENT INDIVIDUAL: If you have identified any Resident Population (Factor 2), assign a score of 50; otherwise, assign a score of 0.		[50 or 0] 50		
4. WORKERS: Assign a score from the following table based on the total number of workers at the facility and nearby facilities with suspected contamination:		[15, 10, 5, or 0] 0		
5. TERRESTRIAL SENSITIVE ENVIRONMENTS: Assign a value from PA Table 7 for each terrestrial sensitive environment that is located on an area of suspected contamination:	Sum =	0		
6. RESOURCES: A score of 5 is assigned.		[5] 5		
	T =	195		
WASTE CHARACTERISTICS				
7. Assign the waste characteristics score calculated on page 4.	WC =	[100, 32, or 18] 32		

Number of Workers	Score
0	0
1 to 100	5
101 to 1,000	10
> 1,000	15

Terrestrial Sensitive Environment Type	Value

RESIDENT POPULATION THREAT SCORE: $\frac{LE \times T \times WC}{82{,}500}$ = [subject to a maximum of 100] 41.6

NEARBY POPULATION THREAT SCORE: *Assign a score of 2* = 2

SOIL EXPOSURE PATHWAY SCORE: Resident Population Threat + Nearby Population Threat = [subject to a maximum of 100] 43.6

PA TABLE 7: SOIL EXPOSURE PATHWAY
TERRESTRIAL SENSITIVE ENVIRONMENT VALUES

Terrestrial Sensitive Environment	*Assigned Value*
Terrestrial critical habitat for Federally designated endangered or threatened species National Park Designated Federal Wilderness Area National Monument	100
Terrestrial habitat known to be used by Federally designated or proposed threatened or endangered species National Preserve (terrestrial) National or State terrestrial Wildlife Refuge Federal land designated for protection of natural ecosystems Administratively proposed Federal Wilderness Area Terrestrial areas utilized by large or dense aggregations of animals (vertebrate species) for breeding	75
Terrestrial habitat used by State designated endangered or threatened species Terrestrial habitat used by species under review for Federally designated endangered or threatened status	50
State lands designated for wildlife or game management State designated Natural Areas Particular areas, relatively small in size, important to maintenance of unique biotic communities	25

AIR PATHWAY CRITERIA LIST

Site Name: [illegible]
Date: May 21, 1991

This chart provides guidelines to assist you in hypothesizing the presence of a suspected release. It is expected that not all of this information will be available during the PA. Also, these criteria are not all-inclusive; list any other criteria you use to hypothesize a suspected release. This chart will record your professional judgment in evaluating this factor.

The "Suspected Release" section of the chart guides you through evaluation of some conditions to help hypothesize whether a release from the site is likely. For the Air Pathway, if a release is suspected, "Primary Targets" are any residents, workers, students, or sensitive environments within ¼ mile of the site.

Check the boxes to indicate a "yes", "no", or "unknown" answer to each question. If you check the "Suspected Release" box as "yes", make sure that you assign a Likelihood of Release value of 550 for the pathway.

AIR PATHWAY

SUSPECTED RELEASE				PRIMARY TARGETS
Yes	No	Unknown		
☐	☑	☐	Have odors been reported?	*If you suspect a release to air, evaluate all populations and sensitive environments within ¼ mile (including those onsite) as Primary Targets.*
☐	☑	☐	Has a release of hazardous substances to the air been directly observed?	
☐	☑	☐	Are there any reports of adverse health effects (e.g., headaches, nausea, dizziness) potentially resulting from migration of hazardous substances through the air?	
☐	☑	☐	Is there any circumstantial evidence of an air release?	
☐	☑		Other criteria? _____	
☐	☑		SUSPECTED RELEASE?	

Summarize the rationale for suspected release (attach an additional page if necessary):

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AIR PATHWAY SCORESHEET

Pathway Characteristics	
Do you suspect a release (see Air Pathway Criteria List, page 21)?	Yes ___ No ✓
Distance to the nearest individual:	NONE ft

	A Suspected Release	B No Suspected Release	References
LIKELIHOOD OF RELEASE			
1. SUSPECTED RELEASE: If you suspect a release to air (see page 21), assign a score of 550, and use only column A for this pathway.	[550]		
2. NO SUSPECTED RELEASE: If you do not suspect a release to air, assign a score of 500, and use only column B for this pathway.		[500] 500	
LR =		500	
TARGETS			
3. PRIMARY TARGET POPULATION: Determine the number of people subject to exposure from a release of hazardous substances through the air (see Air Pathway Criteria List, page 21). ___ people x 10 =			
4. SECONDARY TARGET POPULATION: Determine the number of people within the 4-mile target distance limit, and assign the total population score from PA Table 8.		128	
5. NEAREST INDIVIDUAL: If you have identified any Primary Targets for the air pathway, assign a score of 50; otherwise, assign the highest Nearest Individual score from PA Table 8.	[50, 20, 7.2.1, or 0]	[20, 7.2.1, or 0] 20	
6. PRIMARY SENSITIVE ENVIRONMENTS: Sum the sensitive environment values (PA Table 5) and wetland acreage values (PA Table 9) for environments subject to exposure from air hazardous substances (see Air Pathway Criteria List, page 21).			
Sum =			
7. SECONDARY SENSITIVE ENVIRONMENTS: Use PA Table 10 to determine the score for secondary sensitive environments.		.25	
8. RESOURCES: A score of 5 is assigned.	[5] 5	[5] 5	
T =		153.25	
WASTE CHARACTERISTICS			
9. A. If you have identified any Primary Targets for the air pathway, assign the waste characteristics score calculated on page 4, or a score of 32, whichever is GREATER; do not evaluate part B of this factor.	[100 or 32]		
B. If you have NOT identified any Primary Targets for the air pathway, assign the waste characteristics score calculated on page 4.	[100, 32, or 18]	[100, 32, or 18] 32	
WC =		32	

Sensitive Environment Type	Value

AIR PATHWAY SCORE: $\frac{LR \times T \times WC}{82{,}500}$ [subject to a maximum of 100] 29.7

Site Name:
Date:

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PA TABLE 8: VALUES FOR SECONDARY AIR TARGET POPULATIONS

Distance from Site	Population	Nearest Individual (choose highest)	Population Within Distance Category: 1 to 10	11 to 30	31 to 100	101 to 300	301 to 1,000	1,001 to 3,000	3,001 to 10,000	10,001 to 30,000	30,001 to 100,000	100,001 to 300,000	300,001 to 1,000,000	1,000,001 to 3,000,000	Population Value
Onsite	0	20	1	2	5	16	52	163	521	1,633	5,214	16,325	52,136	163,246	0
>0 to ¼ mile	286	(20)	1	1	1	(4)	13	41	130	408	1,303	4,081	13,034	40,811	4
> ¼ to ½ mile	5276	2	0	0	1	1	3	9	(28)	88	282	882	2,815	8,815	28
> ½ to 1 mile	5319	1	0	0	0	1	1	3	(8)	26	83	261	834	2,612	8
> 1 to 2 miles	31643	0	0	0	0	0	1	1	3	8	(27)	83	266	833	27
> 2 to 3 miles	110645	0	0	0	0	0	1	1	1	4	12	(38)	120	376	38
> 3 to 4 miles	183586	0	0	0	0	0	0	1	1	2	7	(23)	73	229	23
Nearest Individual =		20											Score =		128

PA TABLE 9: AIR PATHWAY VALUES FOR WETLAND AREA

Wetland Area	Assigned Value
Less than 1 acre	0
1 to 50 acres	25
Greater than 50 to 100 acres	75
Greater than 100 to 150 acres	125
Greater than 150 to 200 acres	175
Greater than 200 to 300 acres	250
Greater than 300 to 400 acres	350
Greater than 400 to 500 acres	450
Greater than 500 acres	500

PA TABLE 10: DISTANCE WEIGHTS AND CALCULATIONS FOR AIR PATHWAY SECONDARY SENSITIVE ENVIRONMENTS

Distance	Distance Weight	Sensitive Environment Type and Value (from PA Table 5 or 9)	Product
Onsite	0.10	x 1TO 50 ACRE WETLANDS - 25	.25
		x	
0-1/4 mi	0.025	x	
		x	
		x	
1/4-1/2mi	0.0054	x	
		x	
		x	
		x	
Total Environments Score =			.25

NW

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MAY 31, 1991

SITE SCORE CALCULATION

	S	S^2
GROUND WATER PATHWAY SCORE (S_{gw}):	4.3	18.5
SURFACE WATER PATHWAY SCORE (S_{sw}):	100	10000
SOIL EXPOSURE PATHWAY SCORE (S_{se}):	43.6	1901.0
AIR PATHWAY SCORE (S_a):	29.7	882.1
SITE SCORE: $\sqrt{\frac{S_{gw}^2+S_{sw}^2+S_{se}^2+S_a^2}{4}}$ =		56.6

RECOMMENDATION

NO FURTHER ACTION IS RECOMMENDED FOR THIS SITE BECAUSE OF THE HIGHLY INDUSTRIALIZED NATURE OF THE SURROUNDING AREA AND DRINKING WATER IS NOT THREATENED.

SUMMARY

	YES	NO
1. Is there a high possibility of a threat to nearby drinking water wells by migration of hazardous substances in ground water?	☐	☑
A. If yes, identify the wells recommended for sampling during the SI.		
B. If yes, how many people are served by these threatened wells?		
2. Are any of the following suspected to have been exposed to hazardous substances through surface water migration from the site?	☐	☑
A. Drinking water intake	☑	☐
B. Fishery	☑	☐
C. Sensitive environment: wetland, critical habitat, others		
D. If yes, identify the targets recommended for sampling during the SI.		
	☑	☐
3. Do people reside or attend school or day care on or within 200 ft of any area of suspected contamination?	☐	☑
4. Are there public health concerns at this site that are not addressed by PA scoring considerations? If yes, explain:		

Facility Name: DIETRICHS INDUSTRIAL SITE

Location: LITTLE FERRY, BERGEN COUNTY

EPA Region: II

Person(s) in Charge of the Facility: FRANK NOTARANGELO

BILL FOORGEREL

Name of Reviewer: KAREN HIERING Date: 3/25/91

General Description of the Facility:

(For example: landfill, surface impoundment, pile, container; types of hazardous substances; location of the facility; contamination route of major concern; types of information needed for rating; agency action, etc.)

DIETRICHS INDUSTRIAL IS A 8.76-ACRE VACANT LOT. A 1989 LETTER FROM THE CLERK FOR THE LITTLE FERRY PLANNING BOARD TO THE NJDEP STATES, "THIS WAS THE SITE OF A SEWAGE TREATMENT PLANT AND VARIOUS CHEMICALS WERE DUMPED ON THIS SITE."

Scores:

HRS $S_M = 2.00$ ($S_{gw} = 1.57$ $S_{sw} = 3.08$ $S_a = 0$)

PRO $S_M = 5.28$ ($S_{gw} = 4.47$ $S_{sw} = 7.97$ $S_a = 0$)

HRS COVER SHEET

Ground Water Route Work Sheet

Rating Factor	Assigned Value (Circle One)	Multi-plier	HRS	Max. Score	PRO
[1] Observed Release	(0) 45	1	0	45	45
If observed release is given a score of 45, proceed to line [4]. If observed release is given a score of 0, proceed to line [2].					
[2] Route Characteristics					
Depth to Aquifer of Concern	0 (1) 2 3	2	2	6	
Net Precipitation	0 1 2 (3)	1	3	3	
Permeability of the Unsaturated Zone	0 1 (2) 3	1	2	3	
Physical State	0 1 2 (3)	1	3	3	
Total Route Characteristics Score			10	15	
[3] Containment	0 1 2 (3)	1	3	3	
[4] Waste Characteristics					
Toxicity/Persistence	0 3 6 (9) 12 15 [18]	1	9	18	18
Hazardous Waste Quantity	0 [1] 2 3 4 5 6 7 8	1	1	8	1
Total Waste Characteristics Score			10	26	19
[5] Targets					3
Ground Water Use	0 [1] 2 3	3	3	9	
Distance to Nearest Well/Population Served	[0] 4 6 8 10 12 16 18 20 24 30 32 35 40	1	0	40	0
Total Targets Score			3	49	3
[6] If line [1] is 45, multiply [1] x [4] x [5]. If line [1] is 0, multiply [2] x [3] x [4] x [5]			900	57,330	2565
[7] Divide line [6] by 57,330 and multiply by 100		S_{gw} = 1.57			4.47

Surface Water Route Work Sheet

Rating Factor	Assigned Value (Circle One)	Multiplier	HRS	Max. Score	PRO
1 Observed Release	(0) 45	1	0	45	45
If observed release is given a value of 45, proceed to line 4. If observed release is given a value of 0, proceed to line 2.					
2 Route Characteristics					
Facility Slope and Intervening Terrain	(0) 1 2 3	1	0	3	
1-yr. 24-hr. Rainfall	0 1 (2) 3	1	2	3	
Distance to Nearest Surface Water	0 1 2 (3)	2	6	8	
Physical State	0 1 2 (3)	1	3	3	
Total Route Characteristics Score			11	15	
3 Containment	0 1 2 (3)	1	3	3	
4 Waste Characteristics					
Toxicity/Persistence	0 3 6 (9) 12 15 [18]	1	9	18	18
Hazardous Waste Quantity	0 [1] 2 3 4 5 6 7 8	1	1	8	1
Total Waste Characteristics Score			10	28	19
5 Targets					
Surface Water Use	[0] 1 2 3	3	0	9	
Distance to a Sensitive Environment	0 1 2 [3]	2	6	6	
Population Served/Distance to Water Intake Downstream	[0] 4 6 8 10 12 16 18 20 24 30 32 35 40	1	0	40	
Total Targets Score			6	55	6
6 If line 1 is 45, multiply 1 x 4 x 5 / If line 1 is 0, multiply 2 x 3 x 4 x 5			1980	64,350	5130
7 Divide line 6 by 64,350 and multiply by 100		S_{SW} = 3.08			7.97

AIR ROUTE WORK SHEET

Rating Factor	Assigned Value (Circle One)	Multiplier	HRS	Max. Score	PRO
1 Observed Release	(0) 45	1	0	45	0
Date and Location:					
Sampling Protocol:					
If line 1 is 0, the S = 0. Enter on line 4. If line 1 is 45, then proceed to line 2.					
2 Waste Characteristics					
Reactivity and Incompatibility	0 1 2 3	1		3	
Toxicity	0 1 2 3	3		9	
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 8	1		8	
Total Waste Characteristics Score				20	
3 Targets					
Population Within 4-Mile Radius	0 9 12 15 18 21 24 27 30	1		30	
Distance to Sensitive Environment	0 1 2 3	2		6	
Land Use	0 1 2 3	1		3	
Total Targets Score				39	
4 Multiply 1 x 2 x 3				35,100	
5 Divide line 4 by 35,100 and multiply by 100 S_a =			0		0

HRS

	S	S^2
Groundwater Route Score (S_{gw})	1.57	2.46
Surface Water Route Score (S_{sw})	3.08	9.49
Air Route Score (S_a)	0	0
$S_{gw}^2 + S_{sw}^2 + S_a^2$		11.95
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2}$		3.46
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2} / 1.73 = S_M =$		2.00

WORKSHEET FOR COMPUTING S_M

PRO

	S	S^2
Groundwater Route Score (S_{gw})	4.47	19.98
Surface Water Route Score (S_{sw})	7.97	63.52
Air Route Score (S_a)	0	0
$S_{gw}^2 + S_{sw}^2 + S_a^2$		83.50
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2}$		9.14
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2} / 1.73 = S_M =$		5.28

WORKSHEET FOR COMPUTING S_M